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PHOTOGRAPHIC INTELLIGENCE MEMORANDUM

ELECTROCHEMICAL COMBINE
CHIRCHIK, USSR

[redacted]

HTA-M I-58

29 JANUARY 1958

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CENTRAL INTELLIGENCE AGENCY

OFFICE OF RESEARCH AND REPORTS

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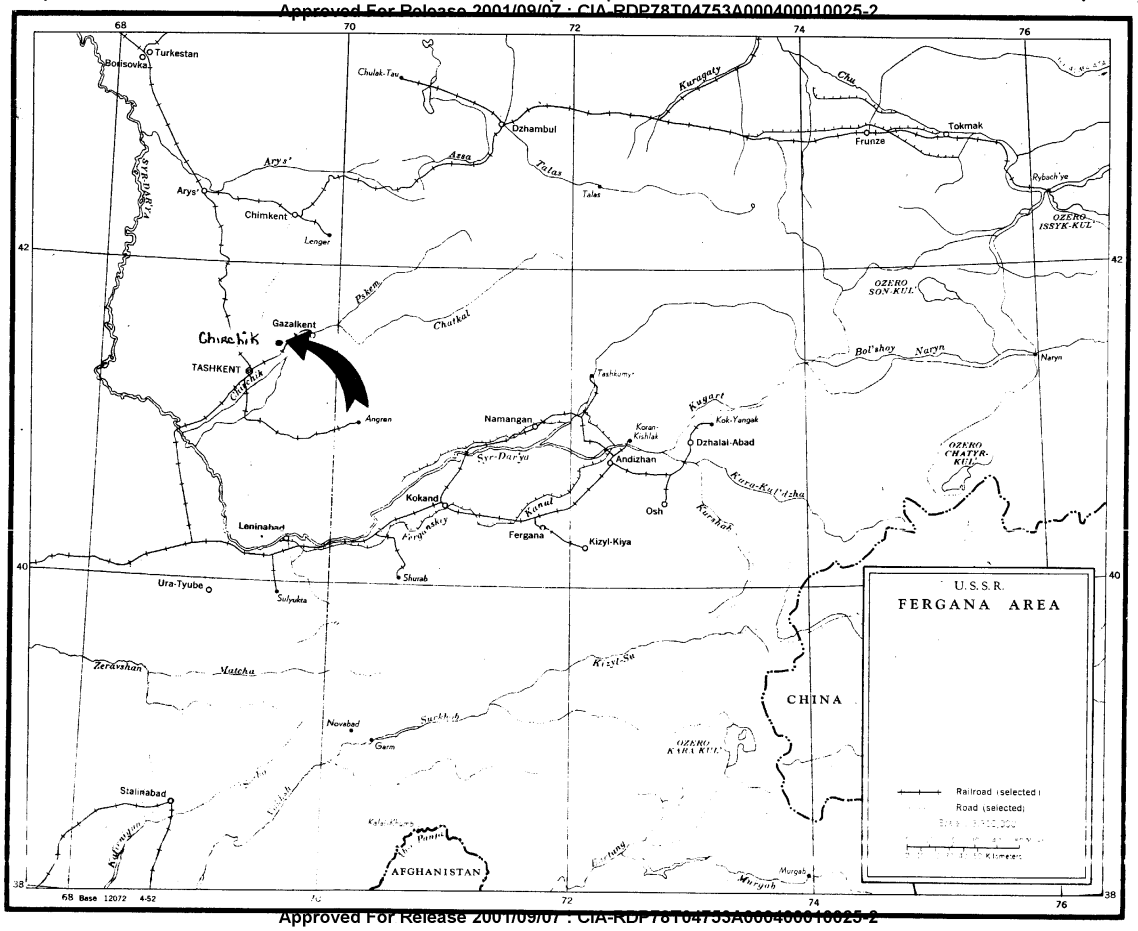
ELECTROCHEMICAL COMBINE

CHIRCHIK, USSR

HTA/M-1/58

29 January 1958



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CHIRCHIK ELECTROCHEMICAL COMBINE

The Chirchik Electrochemical Combine is one of the major producers of nitrogen fertilizers, ammonia, nitric acid, metallic sodium, and heavy water in the USSR. This Combine, covered by [redacted] 25X1D photography, is located in the southwest outskirts of Chirchik, 20 miles northeast of Tashkent. It consists of approximately 130 buildings distributed throughout an area 4800 by 3300 feet.

Electrical power is supplied to the Combine by an interconnected system of small hydroelectric power plants scattered along a large canal paralleling the Chirchik River. Water is apparently supplied to the Combine from a small reservoir located immediately to the west. No water tanks are visible within the plant area.

The railroad line to Tashkent runs along the eastern edge of the plant area. The plant has two rail entrances, one from the south and one from the northeast, with numerous spurs leading to major components of the plant. Only 15 tank cars and 15 freight cars are visible at various locations throughout the plant area. This small amount of rail traffic would not seem sufficient to move the large volume of fuel, raw materials, and finished products which should be entering and leaving this large Combine if it were operating at or near its apparent capacity. However, there are approximately 33 freight cars on a small rail siding one-half mile southwest of the Combine. These freight cars could be associated with the Combine, or they may be associated with the extensive dredging or mining operations in progress in the broad, silted river valley one-half mile south of the rail siding.

The entire Combine is surrounded by a high masonry wall. No guard towers are visible. There is a fairly extensive network of roads within the plant area, but very little vehicular traffic is present. No large truck entrances are apparent. Except for the two rail entrances, the only access to the plant is the personnel and small vehicle entrance located on the north side.

New construction is in evidence at several scattered locations in the Combine. Facilities under construction or newly completed include a large gasholder, a possible ammonium nitrate granulation tower, liquid ammonia tanks, and several processing and storage buildings.

Certain processing equipment normally found out-of-doors in fertilizer plants is not visible on this photography. No ammonia storage tanks, or any of the several usual types of nitric acid absorption towers can be identified. Undoubtedly, these normally easily-recognized features are either under cover, housed in buildings, or obscured by heavy shadows of adjacent buildings. However, there is a conspicuous lack of large fertilizer storage buildings normally found adjacent to fertilizer-producing buildings. For purposes of annotation the Combine has been divided into several generalized functional areas based upon an interpretation of the probable flow of materials, pipeline routings, railroad spurs, types of buildings, and associated features.

The major components of the plant are described in the following key to annotations, and identified on the accompanying plan views.

KEY TO ANNOTATIONS

STORAGE AREA 1, rail served

1. Three partly-buried tanks, 55 feet in diameter.
2. Group of five single-story buildings with total roof area of approximately 20,000 square feet. Earth scars suggest these are of recent construction.
3. Warehouse-type building, 100 by 540 feet.

AMMONIA STORAGE AREA

4. Possible ammonia-storage building, multistory, 135 by 160 feet. Six possible towers are barely discernible on south side of building.

LIQUID OXYGEN AREA

5. Compressor building, multistory, 65 by 145 feet. Along southern edge of building are eight horizontal tanks, grouped in pairs, each tank approximately 50 feet long and 5 feet in diameter. Immediately south of these tanks and along a railroad siding is an unidentified processing building with 14 vents on a flat roof, 30 by 260 feet.

PROCESSING AREA 1, products unidentified

6. Multistory building, monitor roof, 105 by 140 feet. Two additional small buildings, one with three vents in roof, are in this area.

STORAGE AREA 2, rail served

Two large and two small single-story buildings with a total roof area of approximately 29,000 square feet. The southern portion of this area is devoted to open storage along several rail spurs.

FERTILIZER PROCESSING AND STORAGE AREA, rail served

7. Ammonium nitrate fertilizer processing building, multistory, T-shaped, 45 by 220 feet, and 50 by 140 feet.
8. Possible new granulation and storage building, 160 by 50 feet, single story, except for 25-foot-wide section on west end which is approximately 55 feet high.

The storage facilities in this area consist of one multistory and three single-story buildings having approximately 24,000 square feet of roof area. In the northern portion of this area are two excavations in the center of which are two 45-foot diameter earth-covered mounds.

PROCESSING AREA 2, products unidentified

9. Multistory building, 65 by 105 feet. Near northern corner of building is a stack approximately 160 feet high. Near the eastern corner of this buiiding are three horizontal tanks 35 feet long and 10 feet in diameter, elevated approximately 20 feet above ground.

10. Irregularly-shaped, multistory buildings adjoin each other and form a U-shaped complex. Two of the major buildings in this complex measure 20 by 125 feet and are approximately 70 feet high. Each of these buildings has eight stacks or towers (grouped in pairs) extending 45 feet above the roof.

    One vertical tank 25 feet in diameter, approximately 15 feet high, and three vertical tanks, [redacted] in diameter, approximately 10 feet high are scattered in the area. Heavy shadows preclude detection of additional storage facilities. 25X1D

LIQUID AMMONIA AREA

11. Possible liquid ammonia shipping building, single story, 70 by 135 feet. Rail spur with pipeline loading dock is adjacent to southeastern edge of building.

    Nearby, to the north, is a possible compressor/pump building, multistory, 50 by 105 feet with five vents in a monitored roof. Adjacent to this building are three vertical tanks, 15 feet in diameter and approximately 10 feet high.

    Immediately to the northeast are four vertical tanks, 25 feet in diameter, approximately 15 feet high; four horizontal high pressure tanks, 50 feet long and 10 feet in diameter, with cradles for four (possibly five) additional horizontal tanks in place. Similar tanks, possibly waiting to be installed, are laying haphazardly on the ground along the rail spur a short distance west of the shipping building.

PROCESSING AREA 3, products unidentified

12. Two buildings connected by elevated pipeline. One building, single story, 30 by 160 feet with four vents on flat roof. One building, single story (except for 30 foot-wide section on east end which is about twice as high as the west end), 45 by 150 feet. Immediately to the east of these two buildings are two storage-type buildings, one with a possible security fence around it. Lack of vegetation suggests this area may be of recent construction.

STORAGE AREA 3, rail served

Eight large single-story warehouse-type buildings and several small shed-type buildings with a total roof area of approximately 115,000 square feet. Open stores are scattered throughout the northern portion of the area. Earth scars in southern half of area suggest the buildings are of recent construction. Two separate waste dumps of dark-colored unidentified material are located in the southern part of this area.

PROCESSING AREA 4, products unidentified

13. A large multistory building 145 by 420 feet, with a monitor roof. This building is completely surrounded with a high wall.

GAS STORAGE AREA 1

14. Two wet-type gasometers, each 85 feet in diameter, approximately 70 feet high.

STORAGE AREA 4, rail served

One single-story building, 60 by 100 feet, with a vented flat roof is located in an area 330 by 700 feet, completely enclosed by a high wall. A rail line from this fenced area to the electrolytic hydrogen building suggests that this isolated building may be used for storage of heavy water.

REPAIR AND MAINTENANCE AREA

15. Probable maintenance building, T-shaped. East section is multistory, 35 by 125 feet; west section, single story, 115 by 280 feet with large monitor.

16. Machine shop, multistory, 105 by 240 feet, with gantry crane along north side of building. Possible paint stains are observed around two ventilators on roof.

GAS STORAGE AREA 2

17. Wet-type gasometer, 115 feet in diameter, approximately 135 feet high.
18. Wet-type gasometer under construction, 150 feet in diameter, approximately 125 feet high, will be largest in combine when completed.
19. Wet-type gasometer, 115 feet in diameter, approximately 110 feet high.

PROCESSING AREA 5, products unidentified

20. Tall, narrow building, 30 by 55 feet and approximately 80 feet tall, with two short stacks on flat roof. Two towers or stacks 75 feet high, are located along the north side of the building. Adjacent to this building is another very small building containing a stack approximately 85 feet high. This stack may possibly be a waste gas flare.
21. One single-story building, 30 by 435 feet, and one multistory building, 45 by 405 feet.
    Numerous pipelines enter these two buildings and various sized scrubber/absorption-type towers are faintly discernible between the two buildings.
22. T-shaped building. East section is single story, 50 by 105 feet; west section, multistory, 35 by 85 feet.
23. Multistory building, 75 by 265 feet.
    There are five additional small buildings in the area. Earth scars for possible foundation for new building, 90 by 125 feet are visible.

ELECTRICAL POWER AREA

24. Administration-type building, multistory, irregular-shaped, 55 by 265 feet, located at main entrance.
25. Transformer yard, fenced, 280 by 495 feet.
26. Rectifier building, multistory, 90 by 105 feet.

ELECTROLYTIC HYDROGEN AREA, surrounded by high wall

27. Electrolysis building, multistory, irregular-shaped, 170 by 590 feet. Initial production of heavy water takes place in this building by the electrolysis-catalytic exchange process. Four parallel rows of skylights run almost the entire length of the roof on the higher portion of the building. Parallel to these skylights are 83 vents arranged in five rows. Five vertical absorption-type towers, approximately 10 feet in diameter, 50 feet high, are adjacent to the west end of the building. Five vertical absorption-type towers, approximately 15 feet in diameter, 25 feet high, are adjacent to the southwest corner of the building. A faint impresssion of seven possible low tanks or towers is seen in the heavy shadows on the north side of the building.
28. Possible heavy water concentration building. Western half is multistory, 60 by 155 feet, with 16 vents in a monitor roof; eastern half is single story, 60 by 155 feet, with seven vents in a flat roof. The dilute heavy water is probably concentrated to the desired strength in the building.

AMMONIA SYNTHESIS AREA

29. Convertor building, multistory. Southern half is approximately 60 feet high and 50 by 335 feet; northern half, approximately 110 feet high and 50 by 300 feet.
30. Compressor building, multistory, 145 by 430 feet.
31. Wet-type gasometer 85 feet in diameter, approximately 70 feet high.

ELECTROLYTIC SODIUM AREA

32. Possible metallic sodium-chlorine building, multistory, T-shaped, 45 by 375 feet and 55 by 125 feet. Along the north side of building is a possible fenced transformer yard. Shadows and trees preclude detection of power lines into area.

NITRIC ACID AREA

33. Ammonia oxidation building, multistory, 70 by 255 feet. Three absorption-type towers, approximately 20 feet in diameter and 30 feet high are visible at the northeastern corner of the building.

25X1D

A pipe approximately [redacted] in diameter comes out of the top of each tower. An elevated pipeline connects the building with a 90-foot-high stack, located 170 feet east of the building.

34. Nitric acid absorption tower section, irregularly-shaped, 55 by 450 feet.
35. Possible nitric acid concentrator section, consisting of two buildings connected by pipelines to absorption tower section (No. 34). Larger east building is multistory, 65 by 245 feet; smaller west building, multistory, 60 by 140 feet and approximately twice as tall as larger building.

PROCESSING AREA 6, products unidentified

36. Single-story building, irregularly-shaped, 60 by 90 feet. Major pipeline connections to this building.
37. Two possible buried tanks, approximately 55 feet in diameter. Another vertical tank nearby is approximately 30 feet in diameter and 10 feet high.

    Two additional small buildings are located in this area. Excavations have been made for foundations for two (possibly three) buildings, approximately 90 by 90 feet each.

COAL PROCESSING AND STORAGE AREA

38. Coal storage building, single story, 60 by 810 feet.
39. Coal screening building, multistory, approximately 100 by 100 feet.

SEMI-WATER GAS AREA

40. Wet-type gasometer, 115 feet, in diameter, approximately 135 feet high.
41. Gas retort building, multistory irregularly-shaped, 50 by 165 feet. Heavy shadows preclude a detailed description of the gas retort building and its associated features. Several small buildings and two possible tanks adjacent to the retort building are barely visible.

GAS PURIFICATION AREA

42. Gas purification building, multistory, 50 by 165 feet, with four vents in flat roof.
43. Administration-type building, multistory, 45 by 175 feet.

44. Sulfur removal building, multistory, 60 by 150 feet. Twelve catalytic towers protrude through roof. Eastern third of building is higher than rest of the building. Earth scars around building suggest this may be relatively new installation.

STEAM POWER AREA

45. Steam power plant, multistory, irregularly-shaped, 145 by 270 feet. May also serve as an emergency or supplemental electrical power plant, although no external electrical equipment is visible. Steam or smoke is issuing from two of the three stacks at the time of photography.

HTA/M-1/58

REQUIREMENT: Prepared in answer to HTA/SI/R62/57, and RR/HTA/E/R46/57 requesting detailed description and plant layout of Chirchik Electrochemical Combine. 25X1D

[redacted]

REFERENCE:

ATMP: 0328-998-0-25A

COORDINATES: 41° 27' N 69° 35' E

25X1A B.E. NUMBER: [redacted]

CHIRCHIK ELECTROCHEMICAL COMBINE

CHIRCHIK, U S S R

41° 27'N - 69° 35'E

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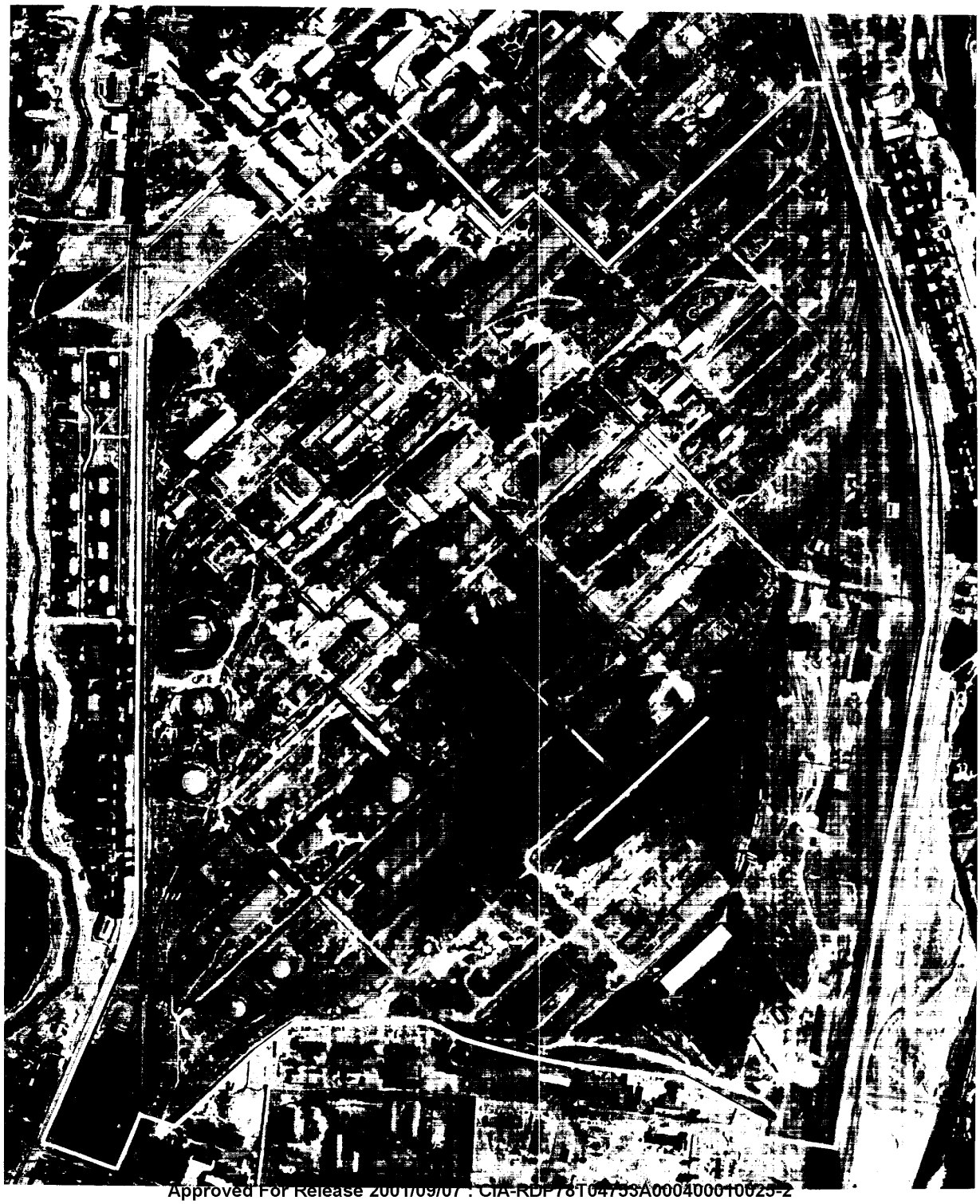
FEET

DATE OF PHOTOGRAPHY [redacted]

25X1D



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CHIRCHIK ELECTROCHEMICAL COMBINE

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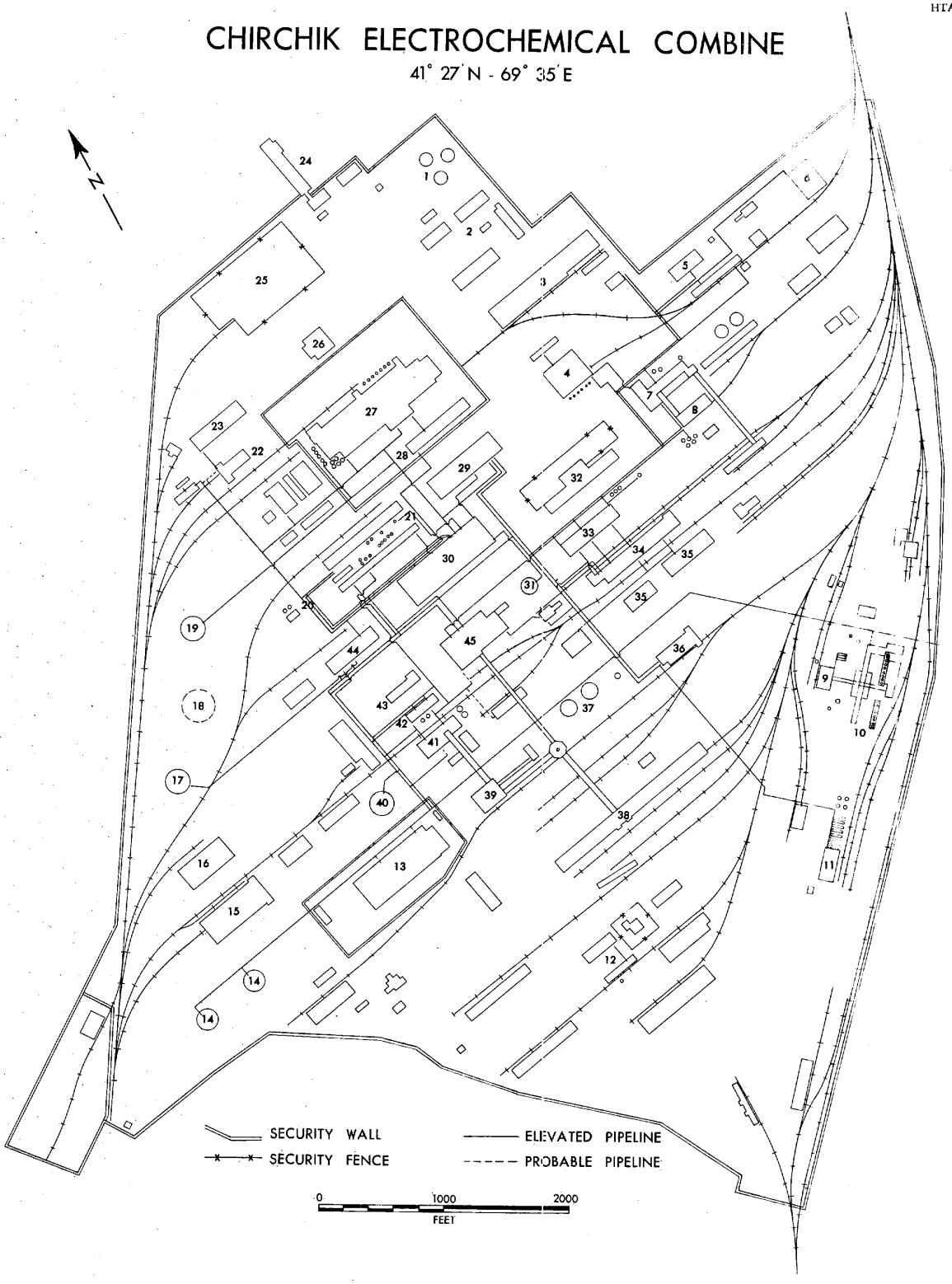
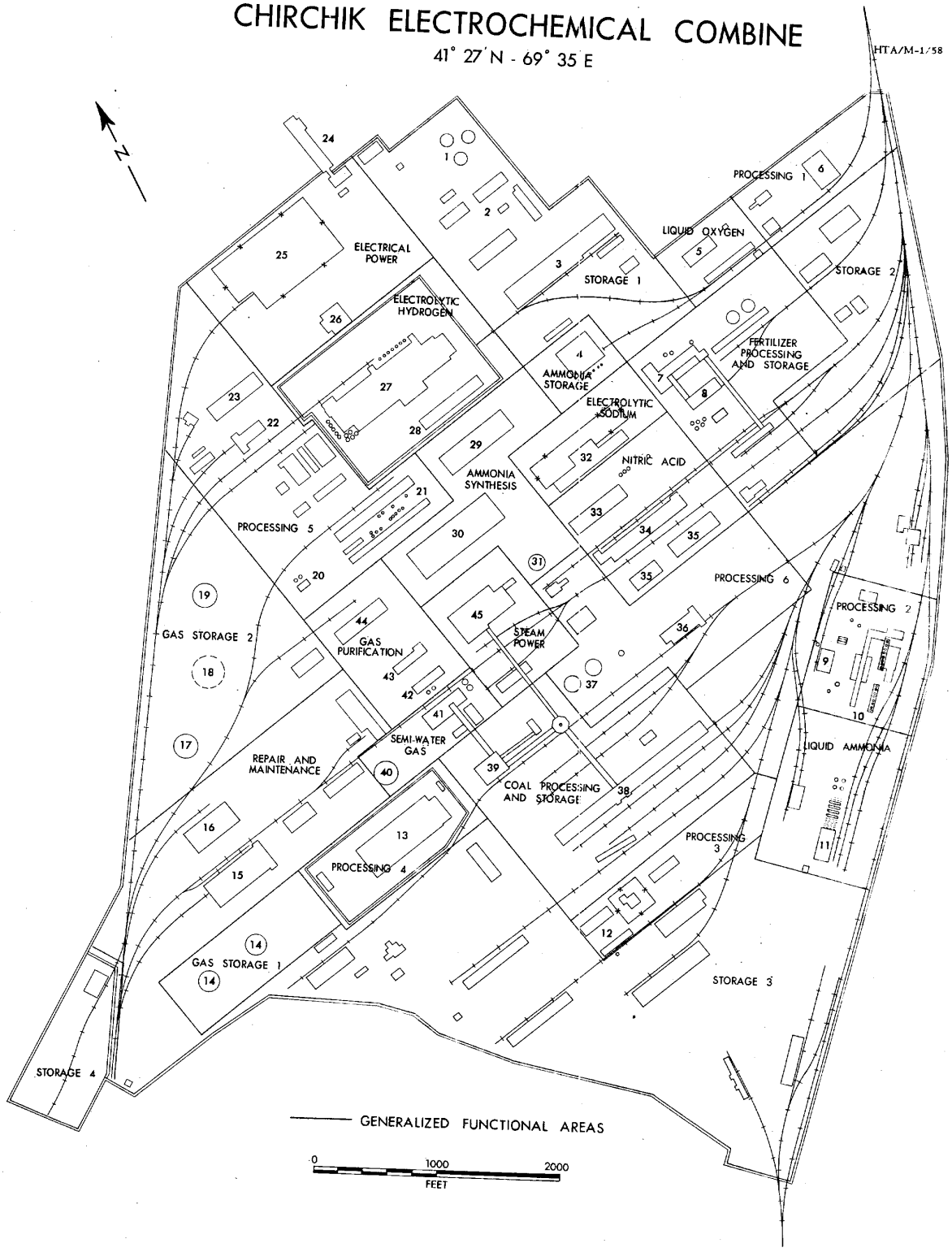


CHIRCHIK ELECTROCHEMICAL COMBINE

41° 27′ N - 69° 35 E

HTA/M-1/58



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